M.R.O. 1—10,006—28-2-50.

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(3) Initials of the Referencer____________

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No. 2503		Press
B.P. No. 191-192		Mis.
Dated 13-10.		~~195~~1873

Not to be folded or roughly handled

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No. 644.

Memorandum

In accordance with the instructions contained in G. O. No. 2173 F of the 20th August 1873, the Red Hills and Cholaveram Tanks were visited on the 15th Instant in company with the District Engineer Chingleput.

2 The works which have been in progress, first at the Anicut on the Cortiliar at Tamarapaukam, and 2ndly on the upper supply Channel, both of which suffered greatly from the floods of November 1872, prevented full advantage being taken this year of the small freshes, which have been frequent in the Cortiliar, to send down water into the Cholaveram and Red Hills Tank, while later in the season the necessity for reconstructing a considerable portion* of the bund of the Cholaveram

Vide endorsement No. 407 of the 5th July 1873.

* 1100 feet.

Cholaveram Tank allowed of the transmission to the lower reservoir of all the water it contained above the large Sluice sill, but unfortunate=ly rendered it requisite to limit the supply which could be admitted from the Cortelliar. The reconstruc=tion work at the Cholaveram Tank is making good progress, and in a few days, should there be water in the Cortelliar it will be possible to allow the Cholaveram Tank water to be raised between 2 and 3 feet; and, as the sluices at the head of the Channel to the Red Hills Tank will be kept entirely open, whatever water may be received will be at once passed on.

3 At present the water in the Red Hills Tank is, as regards the supply of Madras, very low, and the fears of the President of the Municipality as to this supply ceasing altogether for a time are not

not unwarranted, though it may be hoped that a timely small fresh in the river will remove all risk of this. The depth of water on the sill of the lowest pipe of the Municipal sluice was yesterday (16th Septem[ber]) 2'. 5", and though a considerable supply can be drawn off with the water at this level, the discharge would diminish very rapidly as the level fell. The Tank has a very large quantity of water in it, but the method of distribution adopted by the Municipality required that the sluice should be placed on a high level, and so though the water in the Tank is nearly 2½ feet above the old Calingulah crest level, and perhaps 6 or 8 inches below a full level which was but seldom attained, there is some risk of Madras being left without a supply from this source. It appears to be clear from the water returns that

On the 17th there were .33 inches of rain
— 18th — .12
— 21st — 1.16
— 23 — .63
2.24

about half a million gallons per day.

About 33 Millions of C. yds = 5346 Millions of Gallons.

that, had none of the works been damaged last year, and had the Tank bunds not shown signs of instability, enough water would have been retained and have been so far supplemented by the small Cortilliar freshes, as to have given at this time a depth of several feet above the present level, but it must not be forgotten that as yet but a very little extension of cultivation has taken place, and that, if this reaches any thing like the area which has been afsumed, it will, even in ordinarily good seasons, result that at about this time of the year, or perhaps earlier, the Red Hills Tank water will be as low or lower than it is now. The Tank is to hold so many millions above the Mu-nicipal off-take and all this quantity, including additions thereto during the season, is to be made use of; hence it follows that at times no water will be left.-

5 3

4 It is certainly not at all im=probable that there has been a larger quantity of water consumed for irrigation than was necessary. There is no direct evidence either one way or the other, and hitherto there have been no means of introducing measure=ment of the quantity used, and comparing it with the area under irrigation, or, as would be proper and is very necessary, of restricting the issue of water to the area known to require it. Water returns are furnished to this office at short intervals by the District Engineer and on one or two occasions remark=able differences of level have caused references to be made for explanation and it was pointed out to Colonel Moberly some time since that it would be requisite to ascertain what water these Tanks, and that at Chembrambaukam, received, and what the supply accomplished; to compare also

the

the results under one tank with those under another. Really this ought to be done in the case of all important tanks, but that is not at present practicable; a commencement must be made with a few, and with none more necessarily, or so conveniently, as with these three, on which so much money has been spent, from which as yet the returns are very small.

5 The District Engineer of late has however had far too much on his hands to admit of his giving his personal attention to details of this nature, and yet without that attention a fair start cannot well be made. The damage sustained by irrigation works at the end of the last Calendar year has occasioned much additional work, added to which he has been for some months without any Officer in the Mount Range in which

these

these works are situated. He has had more work than he could get through, and many things which ought to have been done have necessarily been left undone.

G.O. No. 2229 dated 9th September 1873.

6 A revised Conservancy establishment has just been sanctioned for the Chingleput District, and there should now be no difficulty in arranging for the keeping of such registers of water levels &c. as may be required, and these arrangements should be made at once. Colonel Moberly should then, as soon as possible, prepare tables of the quantities of water held by each tank for each six inches of depth: these can only be approximate, as the contoured levels are at intervals of a yard, but they can be obtained with some approach to accuracy by seeing the ratio of increase of capacity to increase of depth, and interpolating

interpolating accordingly. In the next place a Statement of water receipts and expenditure will be necessary, and the latter will have to be capable of being accounted for by

1st. Water evaporated and absorbed,
2d. — do — used.—

7 The measurement of water discharged by the sluices for irrigation, and for Town supply can most conveniently be made at small weirs constructed for the purpose in rear of the several sluices. At the Municipal sluice no doubt the Engineer in charge will devise arrangements the accuracy of which can be tested; and at the Tank Sluices, small weirs should be built having a considerable length of crest, which latter should have an iron edge and where possible there should be a clear overfall though this is not essential. These weirs should be placed at some distance from the rear end of the sluice tunnels, so as to allow the

disturbed

disturbed water to settle, and thus admit of the head passing over the weirs being accurately measured. The actual measurement of this head should be made in a Cylinder having free communication with the water, but only through small holes, so that the surface inside may be quite still.–

8. It will be necessary that returns of cultivation should be sent weekly from all Villages irrigating under the Tanks. The Tank Monegars will be the proper persons to whom to send them, by whom after regulating the Sluices accordingly they will be transmitted to the Range Officer. For each sluice a table will be prepared showing the discharge for each depth on the measuring weir from $\frac{1}{10}$th" of an inch up to the maximum allowed which will not be very great. Or, when the

discharge

discharge is measured by area of sluice opening a table and instructions adapted to the circumstances should be provided.
The arrangements for distribution to the several Villages are as yet very imperfect, and nothing appears to have been done for providing for the irrigation of new lands. It follows that the consumption of water will be greater than it need be when every channel and branch channel has its proper regulating dams or sluices, and that these should therefore be constructed as soon as may be practicable.
For the present the supply per acre may be allowed to be as high as a maximum as 3 Cubic yards per acre per hour, equivalent to 2·25 C. yds per second for 100 acres. The monegars should be instructed, whenever the consumption exceeds

2 C. yds

2 C. Yds per acre per hour to inspect the irrigation and to ascertain what wastage is going on. They will soon know where surplus running to waste is to be looked for, and the supply to that block or section of the cultivation can then be diminished accordingly. The actual regulation by the Tank establishments should be confined to the heads of channels appertaining to a single village, and all regulation below that should be managed by the Village Officers. With the aid of the Revenue Inspectors there will probably be no difficulty in preventing any considerable waste while afford-ing a sufficient supply to the crops, and, as the distribution arrangements become more perfect, waste should gradually be reduced to a mini-mum. The Range Officer should make himself thoroughly acquainted with

with all the channels under the Tanks in order that he may be able to instruct and control the monegars: the Revenue survey Maps will be of great service in obtaining this knowledge, and with these and a statement of lands under each channel, effective regulation will soon be quite practicable.

Fort Saint George
17th September
1873

J. Mullins Lieut. Col. R.E.
Chief Engineer for Irrigation.

To
The Secretary to Government
Public Works Department.

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245-191

P.W. 1873 Department
P.W. of Govt for Citn.
No. 644.

No. 5168.

From
The Chief Engineer for Irrigation
To
The Secretary to Govt. P.W.D.

Dated 17th
Despd. 20th } September 1873.
Received 20th

Reports on the subject of increasing the supply of water in the Red Hills Tank.

No. 191
R. 9 Octr/73
~~Despd 6 Octr 22-9-73~~

No. 2503-13 Oct 73

No. 2513 P. W. Deptt.

Irrign.

Proceedings of the Madras Govt.

Read the following

From
The Chief Engr.
for Irrigation } (H-E No. 644 d/ 17- Septr. 1873)

Send copies of these remarks to Lt. Col. Mullins with the printed copies of his Memo & the orders
Govt.

Pr

Is there no mode of absolutely securing Madras against the deficiency now apprehended? Is the position of the (high level) "sluice" (referred to by Col. Mullins) beyond redress? and if so, ought not the water of the R. H. Tank to be applied

WR 28/9

Ordered that this Memorandum by the Chief Engineer for Irrigation be communicated to the Distl. Engineer, Chingleput, with a view to immediate measures being taken for the efficient regulation of the supply to irrigated lands under the Red Hills

Hills, Cholaveram and Chembrumbaukum Tanks; the former tanks to be taken up first.

2 These Proceedings will likewise be commu- -nicated to the Revenue Department, in order that every assistance may be given by the Revenue Inspectors and Taluq Officers generally in carrying out the arrange- -ments necessary to prevent waste, and at the same- time ensure a proper dis- -tribution of a sufficient supply of water

3 In communica- -ting these papers to the President

Exclusively to the supply of Madras? — I cannot think they ought to be allowed to remain as they are. The danger is one to which the Pres.y Town ought not to be liable.

[initials] 5/28/73

We must re- spect existing irrigation rights or buy them up which would be very expensive - a

President of the Munici-
-pal Commission of
Madras, that Officer
will be requested to ar-
-range for the accurate
measurement and record
of quantities of water
drawn off from the
Red Hills Tank at
the Municipal Offtake.
and Copies of the Register
should be sent weekly
to the District Engineer,
for incorporation in
the general Statement
of water expenditure.
Mr Loch's attention
will also be called to
the observations contained
in paragraph 3 of the
Chief

to new irrigation
be here reckoned
[illegible] them — as an
asset — but if
one of the two must
suffer — the city
or the revenue —
then I would saddle
the latter with the
the loss — The risk
of a deficiency
of water in a large
town — liable by an
act truly [illegible] a
particular source
of supply — a separate

Chief Engineers' Memo-
-randum.

4. The Governor
in Council desires that
all Departments and
Officers concerned will
do all that is practicable
to prevent waste of the
water stored in the
Reservoirs at the Red
Hills and Cholaveram.
It is manifestly of
great importance that
these works on which
between £120,000 and
£130,000 have been
spent should be very care-
-fully managed and turned
to the best account. The
works have been hitherto
less

that it is – I th[illegible]
the preferable al-
ternative to [illegible]
in money than
in life &c.

J D S

19

less efficient than, it is hoped, they will shortly be, from leakage under, and slips at, the reservoir bunds and a full supply has not been as yet retained, while the means of bringing water from the Cortilliar have been much curtailed by accidents to the Anicut and head works and to the supply Channel, which were designed with reference to floods, the level of which was determined on the best data then available, but which has been very greatly exceeded, thereby causing serious damage.

These

These defects are in course of rectification, and His Excellency looks to the District Engineer of Chingleput, and to the Chief Engineer for Irrigation, to take care that nothing is left undone to prevent accidents for the future, and to ensure the attainment of the objects for which the Government undertook the extensive works included in the Madras Water Works project, and the formation of these great reservoirs.

Ag. 19/9/73

GMW

Red Hills Tank

H. E. the Governor

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Ex. Chingleput
Ch Engr for Irrign
President Municipal Comm Madras
Rev Deptt

S.C. [illegible] 18/10/73

[illegible] 20-9-73 R. 9th Oct/73

Ch. 5168

Govt. of {1873} Madras.

PUBLIC WORKS.

To The District Engr
Chingleput

Dated

Recd. Encl.

G. O. 13 Oct. 1873, No. 2503.

Nos. 191 & 192

Red Hills Tank.

Passing orders on Memo by the Chief Engr. for Engr. reporting on the subject of increasing the ~~[illegible]~~ quantity of water in the Red Hills Tank.

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